

-Y-12 BULLETIN

A Newspaper For Y-12 Employees of Union Carbide Corporation—Nuclear Division

VOL. 20 - NO. 19

OAK RIDGE, TENNESSEE

Wednesday, May 11, 1966

A. S. Johnson Is Named Executive Vice President Of Union Carbide Corporation

Adger S. Johnson has been named an executive vice president of Union Carbide Corporation and a member of the president's office.

Johnson joined Union Carbide in 1928 at the corporation's Eveready battery plant, Cleveland, Ohio. This plant was part of National Carbon Company, predecessor of Union Carbide's present Carbon Products and Consumer Products divisions.

From Cleveland, Johnson moved to Shanghai, China, where he spent six years and became manager of the Eveready battery plant there in 1939. Following his return to the United States, he held executive positions at various locations across the country. In 1951, he became president of National Carbon, and became a vice president of the corporation in 1959. He is also a director of Dunlap and Associates, Inc.

Johnson is a graduate of Virginia Polytechnical Institute, and holds an honorary degree of DSc from Clarkson College of Tech-



Adger S. Johnson

The President's office, which is the central point of management authority for Union Carbide, is made up of Birny Mason Jr., Kenneth Rush, Kenneth H. Hannan, who is also an executive vice president of the corporation, and

Electrical And Electronics Engineers To Hear ORAU's Pollard Friday, May 13

The Oak Ridge Section of the Institute of Electrical and Electronics Engineers will meet Friday, May 13, at 7:30 p.m. at the Alexander Motor Inn, Oak Ridge. A social hour begins at 6:30, with dinner starting at 7:30 p.m.

William G. Pollard, executive director of Oak Ridge Associated

Universities, will speak on "The Language of Life." Dr. Pollard has not only held his present post since 1947, he has had an active interest in several areas of endeavor. In addition to being an educator and scientist, he is an ordained priest of the Episcopal Church, and has authored two books related to the fields of science and theology. He has been awarded several honorary degrees as well as having earned the PhD in Physics at Rice University.

Pollard was the recipient of the Distinguished Service Award of the Southern Association of Science and Industry in 1950, and received the Rice University Semicentennial Medal of Honor for Distinction in Physics in 1962. He is a member of many honorary societies including Phi Beta Kappa, Sigma, Xi, Phi Kappa Phi, and Sigma Phi Sigma.

All IEEE members, wives, guests and interested parties are nyited to attend Friday's dinner meeting. Reservations may be from across the nation, in addimade through L. F. Koontz, extension 3-7600, or Oak Ridge telephone 483-4422.

Theory Group Discusses Plasma Theory Tomorrow

The Theory Group will discuss "Selected Topics from Plasma Theory" at this week's Thermo-

nuclear Division seminar. The seminar is set for Thursday, May 12, in the TD Con-



William G. Pollard

Goode Attends **AEC** Conference

Earl E. Goode, Receiving, Shipping and Traffic, is attending the Atomic Energy Commission Management Conference this week in Las Vegas, Nevada. The meeting is set for May 10 through 12.

AEC and contractor organizations tion to participants from other government agencies, confer on over-all AEC - contractor transportation and traffic management activities.

Goode, along with Tom H. Hardin, from the AEC's Oak Ridge Supply Division, will discuss specialized common carrier services and associated cost justification.

SHORT OF EVIDENCE

Judging a woman by the clothes she wears may be a little public, and any interested party ference Room, Building 9201-2. tricky . . . from lack of evidence. may attend.

Educational Refunds Added To Tax Report

1966 taxpayers, take heed! A recent Internal Revenue Service Ruling requires that Union Carbide Corporation report all educational refunds paid to employees after January 1, 1966. Such payments will be reported to the employee on his Form W-2 in the column "Other Compensation." Although taxes will not be withheld, the employee is required to report these payments on his tax return as taxable compensation.

Following are some typical answers brought up by employees who participate in the Carbide Educational Assistance Plan.

Question - Inasmuch as the refundable portion of the educational expenses is taxable, does this mean the remainder can be claimed as a deduction?

Answer - Not necessarily. The fact that you are taxed on a refund does not automatically give you the right to claim the remainder as a deduction. However, there are now, as in the past, certain educational expenses allowed as deductions. These depend on individual circumstances and if you have specific questions, check with the IRS or a competent tax

Question - In cases where the refund is over three or four years (such as on an advanced degree) can the refund be spread over these years for tax purposes?

Answer — No, to the best of our knowledge this must be shown as income for the year in which it was received.

Question — The Corporation Refund Policy pays one-half of the cost of qualified educational expenses. Will this include onehalf the tax?

Answer — No, payment of the tax is not provided in the policy.

Question — What effect does

this have on refunds received in 1965 or before?

Answer - The Corporation is required to report only those refunds paid to employees after January 1, 1966.

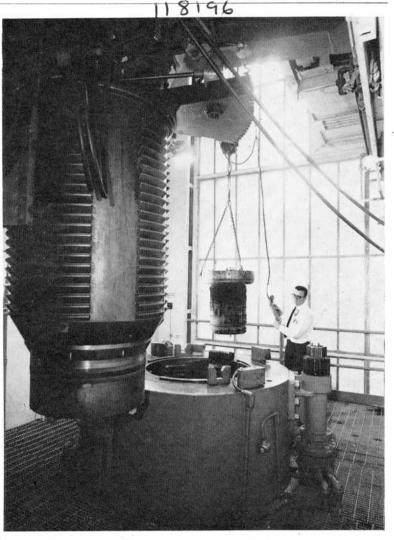
So, a word to the wise should be sufficient. Refunds under the Educational Assistance Plan are taxable . . . and the IRS is notified of those refunds. Failure to report as "other compensation" could lead to unhappy consequences!

T. J. Burnett Lectures Some 75 persons representing For Health Physics Group

T. J. Burnett, ORNL's Health Physics Division, will speak this week for the Health Physics Society lecture series. His subject will be "Laboratory and Facilities Design.'

The East Tennessee Chapter of the HPS is sponsoring the lectures, held at the ORINS Medical Division Building located on East Vance Road, Oak Ridge. The meeting this week is set for Thursday, May 12, at 7:30 p.m.

The lectures are open to the



KEN VALENTINE, BETA TWO FORMING, is seen at the controls of the huge gas autoclave in Y-12. It recently began operation as a materials research tool in the field of powder metallurgy. Materials amenable to gas-pressure bonding will be investigated. Temperatures of 850°C with pressures to 20,000 psi have been achieved using argon gas as the pressing medium. Temperatures to 1500°C are anticipated. The furnace within the pressure vessel can accommodate specimens 15 inches in diameter by 24 inches in height.

UCC Directors Declare Dividend Of 50 Cents

On April 26, the Board of Directors of Union Carbide Corporation declared a quarterly dividend of 50 cents a share on the outstanding capital stock of the corporation, payable June 1, to stockholders of record at the close of business May 6, 1966.

The last quarterly dividend was also 50 cents per share, paid March 2.

AVCIDABLE ACCIDENTS

Four of every five traffic accidents in 1965 could have been avoided, according to the Travelers Insurance Companies. The major cause of death and destruction on U.S. highways, says Travelers, is driver error and lack of judgment.

SAFETY SCOREBOARD

The Y-12 Plant Has Operated 12 Days Or 305,000 Man-Hours Through May 8 Without A Disabling

Injury Phone 3-7755 (Unofficial Estimate) For Daily Report On Accident-Free Hours

UCC Lab Produces Many Radioisotopes

Union Carbide's Sterling Forest, New York, Laboratory will expand its scope of customers for radioisotopes. Until the present, Union Carbide has concentrated on bulk shipments of radioisotopes sold primarily to pharmaceutical firms. The laboratory is expanding its operation to include small users. The move was prompted by the decision of the Atomic Energy Commission to discontinue the manufacture of certain radioisotopes because of a commercial production capability. Union Carbide's laboratory is one of the largest private producers of radioisotopes in the country. As a result of the AEC position, the Sterling Forest laboratory will increase the number and types of radioisotopes available. Handling charges on small quantities of radioisotopes also being revised downward because of rising sales. A radioisotope catalogue containing the revised price sheets is being mailed to all potential and licensed radioisotope users.

FAIR WEATHER FOULS

Favorable weather is no safeguard against highway accidents, says the Travelers Insurance Companies. The overwhelming percentage of all accidents in 1965 occurred during clear and dry weather.

Published Weekly For The Y-12 Employees Of UNION CARBIDE CORPORATION



NUCLEAR DIVISION

JAMES A. YOUNG

Member

Appalachian Industrial Editors Association

Editor

OFFICE Post Office Box Y Oak Ridge, Tenn. 37830 Room 137 Bldg. 9704-2 Telephone 3-7100

ROTC Honors Go To Sam Hodnett



Samuel A. Hodnett Jr.

Honors come easily to Samuel A. Hodnett Jr. He was recently the recipient of three awards at the Joint Reserve Officers Training Corps - Armed Forces Honors Day at the Georgia Institute of Technology.

Sam is the son of Samuel A. Hodnett, Instrument Engineering.

He was presented the Georgia Tech Honor Award as the outstanding Air Force ROTC student. The ward was presented by Edwin D. Harrison, Tech president, and is awarded annually to three senior ROTC students - Army, Navy and Air Force, respectively - who have demonstrated "outstanding ability in scholarship, military achievement and leadership." It is the highest honor given a military student at Tech. Sam also received an award from the Society of American Military Engineers as the Outstanding Engineering senior, and from the Air Force Association as Outstanding Air Force ROTC stu-

Cadet Hodnett has served as Wing Commander with the rank of Cadet Colonel in the Air Force ROTC Unit at Tech, and will be commissioned a lieutenant in the U.S. Air Force in July at camp. Young Hodnett will obtain his co-op degree in Mechanical Engineering next month. (He coing his Tech stay.) While at Tech, he has continuously been on the Dean's List, with a current 3.3 cumulative average. He was elected in his junior year to the honor fraternities Tau Beta Phi (mechanical engineering), Pi Tau Sigma (engineering) and the National Society of Scabbard and Blade (military honors); and in his senior year to Phi Kappa Phi, a senior honor society. He is a member of Sigma Nu social fra-

The Hodnetts live at 101 Peach Road Oak Ridge

The Bulletin Spelling Bee Won By Jackie Brown



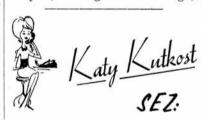
Jackie Brown

Jackie Brown, 13 - year - old daughter of Mr. and Mrs. John O. Brown, Clinton Highway, will represent Norwood School in the Knox County Spelling Bee. Jackie capped honors for her school recently. She had to compete against her younger brother, John Carter Brown, in the process. John was the match; Jackie the eighth.

Other than being a crackerack speller, Jackie is active in ning order. the Girl Scouts, and enjoys horseback riding, and reading. She is an avid history fan, and is very interested in politics, local, state and national. (Good girl, Jackie!)

This is the second year in a row that Jackie and John have competed against one another in the spelling contest.

Their father is in Y-12's Buildings, Grounds and Maintenance Shops (working in the Garage)



Ed Isham, Beta Two Forming, displayed his native sagacity and savvy by saving \$10,000 yearly with the help of a dull pocket knife, a big blotter and a roll of

The old way of preparing green compacts for fabrication of cylinders by powder metallurgy techniques, used a metal wrap to gurantee correct diameter of the pressed compact. These corsets were rolled, ground and, naturally, expensive . . . which bothered Ed no little.

Our hero now uses instead of metal, heavy blotting paper, which he gets by the roll, wholesale. An old scout knife machines the blotter to size and tape provides the finishing touch to maintain shape. The new look girdle is not only cheaper, but doesn't cut into the container when pres-

opped at Lockheed, Marietta, dur- tape you, pinch-free, and guaran- ton, D.C.

tee you to stay dry.
P.S. LAST MINUTE FLASH
. . . The AEC has worked up a set of Cost Reduction display panels from all their installations. Naturally, an entry from Y-12 made the board. The effort can be seen this week on the Cafeteria frontporch. Martin Gardiner, matire d, in commemoration of the event, will not raise food prices during the showing.

usually wants to kill it with someone who hasn't.

Lawnmower Accidents Show Increase As Blades Take Over Gardening As Well As Lawn Care ...

(Editor's Note: This is the first attack on off-the-job-accidents. During the entire month of May, Y-12ers will concentrate on home injuries, automobile safety, and general safety at play. More than 100 Y-12ers suffered disabling injuries off-the-job last year alone! Today's feature is the 'monster from the green lagoon' the lawnmower.)

This Spring and Summer, Y-12ers will descend on their front lawns with a fury. Most of them will be equipped with power mowing equipment . . . and most of them will be hell-bent on breaking last year's number of injuries . . . to themselves and innocent bystanders. Leading makers of power garden equipment have declared all-out war on careless owners who - in addition to grass-wind up mowthemselves (and others)

Before you cut a single blade of grass, here are a few safety rules you should know.

First of all, Know your controls and equipment. Every manufacturer encloses an easy-to-read representing the sixth grade in owner's manual of operating instructions, and maintenance tips to keep your mower in safe, run-

Keep Feet Clear

When you start up your mower, be sure your feet are well clear of the blades. You'd be surprised at the mountain of chewed up shoes and sneakers resulting from careless handling of the mower. Incidentally, to be doubly safe, never mow your lawn barefooted or in stockinged

Before you set out in a whirlwind of flying grass, make a thorough check of the lawn and clear away sticks, stones, toys—anything that could be thrown aloft by your powerful mower. And while you're at it, you might just as well inform the younger kids in the family to keep clear of the lawn while you're mowing. Small children and lawn mowers don't belong together.

Gas Up Safely

Lawn mower need more fuel? Be sure the ignition is turned off before adding gasoline to the engine. The spilled gasoline can flare up and singe your eyebrows or worse.

Does your lawn seem to be getting wider and bigger every year? Relax and do it in easy stages. Take time out for a coffee break or a cooling drink. Cool off your mower, too. Turn it off and never leave it running where inquisitive little hands can get

On the off chance that you might have misplaced the operating manual that came with your power mower, you can get a copy of the 1966 Lawn Mowing Safety Guide, just by sending your name sure is applied.

If any of you ladies have foundation problems, consult Ed. He'll

And address on a postcard to "Lawn Safety," Post Office Box 28111, Central Station, Washing-

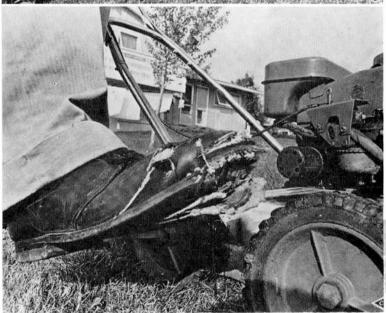
> So, remember, be a wise gardener. Cultivate safety in your lawn mowing this year!

BARE CUPBOARD

More than a third of American families have no savings, investments or reserve funds in the form of banking, investments, bonds or stocks. One-third of the families in the \$5,000 to \$7,500 range have no savings and onefourth of the \$10,000 income fam-Someone with time to kill ilies have no savings. At the level of \$15,000 and over, half of the families save.







THIS PANEL SHOWS SOME THINGS not to do while mowing the grass. In the top photo, a youngster takes off with the deadly machine. In the center picture, the mower climbs a hill backward . . . sure to lose his footing; and in the bottom photo we see the results of sticking your toe too close to the blades. WATCH IT!

Editor Attends AAIE Conference In Chicago

James A. Young, editor of the Y-12 Bulletin, is attending the American Association of Industrial Editors Association conference, being held in Chicago this week. Young is arrangements chairman for the event, planning menus, conference rooms, transportation, etc. for the group.

the Appalachian Industrial Edi- mand.

tors Association, an affiliated group. He was re-elected president for 1966 . . . and is nominated for the board of directors for the national group.

Editors from all over the country form the approximate 500strong AAIE, and the annual conference is the highlight of the year. Next year, the conference will be held in Washington, D.C.

Advice is one commodity sup-Editor Young is president of ply always runs ahead of de-

Bia Crowd Turns Out For Shifters' Rodeo; Fish Strings Look Extra Heavy

The big April 23 Fishing Rodeo staged by E, F, G, H and J shifts brought out 157 registrants, eager to try their luck and skill in the coves of Norris Lake. Prizewinners included:

CRAPPIE

- 1. M. P. Crews Jr. 1 lb. 9 ounces.
- 3. Christie Elliott 1 lb. 7

WALLEYED PIKE

ounces.

ounces. LARGEMOUTH BASS

- ounces.
- ounces.

1. Nelson Tibbatts — 8 ounces.

2. Paul E. Trent — 7 ounces. 3. E. C. Myers — 7 ounces. SMALLMOUTH BASS

1. J. R. Davis - 2 pounds. 2. C. F. Butler — 1 lb. 7 ounces.

"Lexie" Morrow won the big dock prize given by the Stardust 2. Elbert Scott — 1 lb. 8 ounces. Boat Dock folks . . . a handsome spinning rod. Only one fisherman forfeited his win by leaving early. The new rules initiat-1. Lyle Langford — 3 lbs. 12 ed by the shifters at this rodeo stated you have to be present 2. B. E. Burdette — 2 lbs. 11 when the rodeo closes to collect an award.

Another big rodeo is set some-1. M. H. Husky — 2 lbs. 2 time this month by the shifters, as they move to Melton Hill 2. Homer Baker — 1 lb. 3 Lake, searching for those big

Hi-Power Rifle Honors To Spurling

Jack Spurling, Y-12, led the second All Carbide High-Power Rifle match with a 246 out of a possible 250. During the firing at 600 yards, the velocity of the wind seemed to change continuously and many of the experiencously and many of the experienced shooters were caught napping K-25 Sports vs. K-25 Mets. on a few shots as they failed to compensate for some of these changes by proper sight corrections on their rifles. The less experienced firers were ready to Bat Boys vs. Clowns. 'throw in the towel." Jack was followed by George Reimann, X-10, who fired a 243, and he was in turn followed by Arvin Quist, also of X-10, and Bill Kelley, Y-12, who shot 238, 237, respective-

The scores of the other shooters who fired in the match were as

Firer	Scratch	H'Cap
C. Asmanes, Y-12	40	48.154
R. Allstun, Y-12	46	48.974
F. S. Patton, Y-12	46	48.516
H. Wills, ORNL	44	48.267
J. Case, Y-12	42	48.101
W. H. Davy, ORGDP	43	48.649
W. J. Werner, ORNL		46.000
F. Welfare, ORNL	50	50.000
W. E. Brundage, ORNL	48	49.323
A CONTRACTOR OF THE PROPERTY OF THE PROPERTY OF THE PERSON		Victory Superior

Bob Hagood Wins Golf's Calcutta Match In Ridge

Bob Hagood, on leave from Y-12 as business representative for Ridge Country Club course.

mately 56 golfers competed in the

Recreation



Monday, May 16

SOFTBALL: Beginning 6 p.m. Pinewood Field. Eagles vs. Eco-

Tuesday, May 17

SOFTBALL: Beginning 6 p.m. Pinewood Field. Isotopes Reactor vs. Braves; Falcons vs. Bio;

PHYSICAL FITNESS: 7:30 p.m. Oak Ridge High School Gym-

Wednesday, May 18 IN-DOOR RIFLE LEAGUE: 7 p.m. Anderson County Gun Club. Thursday, May 19

SOFTBALL: Beginning 6 p.m. Pinewood Field. Peanuts vs. Fireguards; Big Shops vs. X-10 Mets; Sluggers vs. Health Physics.

Huff Again Paces Y-12 Rifle Team

The ninth firing of the 22 calibre rifle league featured J. L. Huff in first place for Y-12ers with a scratch score of 287, followed by B. L. Powers, 284. and G. W. Holcombe also with the International Association of 284. Handicap tops went to Hol-Machinists, won the recent Cal- combe, 291.182; H. D. Whitehead, cutta competition at the Oak 290.743 . . . and Bert Searles, 288-

Despite intermittent rain both Saturday and Sunday, Hagood was: Y-12, 1414; X-10, 1439; Infired a 145 handicap score for the dependents, 1443. In handicap 36 - hole competition. Approxi- shooting it was: Y-12, 1447.434; X-10, 1454.331; and Independents,

Tee-Off Time Application For Wallace Hills Tournament

Saturday, May 21

Foursome

Leader

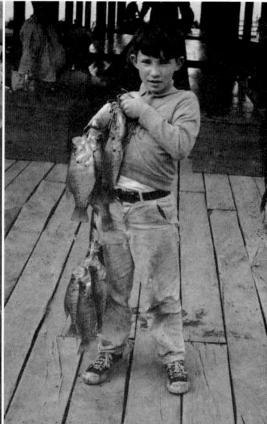
Leader's office phone

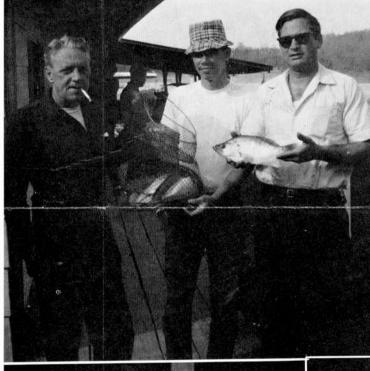
Tee-Off Time Preferred

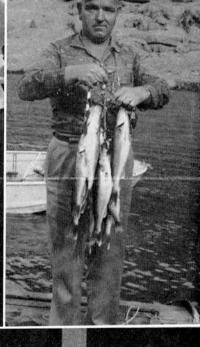
Home phone

Fill out completely and return to the Recreation Office, Building 9704-2. Deadline for entering is 4:30 p.m. Wednesday, May 18. Tee-off times will be drawn the next day, Thursday, May 19, at 8:30 a.m.













BIG HAULS AT THE RODEO staged by E, F, G, H and J Shifts are seen above. In the top left Mr. and Mrs. J. W. Sharp came in with a healthy string of crappie. In the upper right Joe Smyrl (son of Joe) proved that little boys can make big hauls, also. Center left, H. M. Monday, Fred Manning and Mike Crews Jr. 'overtimed' the waters of Norris . . . and center right O. C. Collins displays some wall-eye and sauger he caught. At bottom are B. E. Burdette and Barry Trent (son of Paul).



RETURN POSTAGE GUARANTEED

Post Office Box Y Oak Ridge, Tennessee-37830

BULK RATE **U.S.** Postage PAID Oak Ridge, Tenn. Permit No. 71



THE DEVELOPMENT DIVISION recently conducted a poster contest among its employees and their families. Beverly Ballard, daughter of Ambrose Ballard, Ceramics and Plastic Development, took the prize for a poster on hand and finger safety. She accepts her gift from W. K. Whitson, division superintendent, as her father looks on from the right.

Mike McLain Is Sterling Graduate

Michael McLain, son of Mr. and Mrs. James McLain, will graduate from Roane County High School this Spring in sterling form. Not only will he rank in the top ten per cent of his class academically, but his extra-curricula activities are numerous al-

Mike has played in the band all four years of high school . . . was twice selected to play in the East Tennessee Band. He played the tuba one year in the Oak Ridge Symphony Orchestra.

During his junior year, McLain attended Boys State. He belongs to the Math Club, the Beta Club, and was business manager for the school annual. The faculty at RCHS selected him to Who's Who and he was chosen by fellow classmates as the student most likely to succeed. Mike plans to attend Tennessee Technological University and study mechanical engineering.

The McLains live on Bonny View Avenue, Route 2, Kingston. Papa McLain is in Y-12's Shift Superintendents group.

Instrument Society Meeting Is Tonight

Instrument Society of America's the legal profession, high school by air to the writers. At last re-May meeting is set for tonight, and university, industrial, busi-ports, the PX's in Vietnam were Wednesday, May 4. W. D. Burch, ness and scientific audiences. ORNL's Chemical Technology, The new film describes how will speak on "Transuranium nuclear technique of activation GATHERING OLIVES Program."

the Holiday Inn, Oak Ridge, with inal cases. The method is some a social hour at 5:45 and dinner 100 to 1,000 times more sensitive in a jar. "Look at that nut," he at 6:30 p.m.

are cordially invited to tonight's

Security is always in season. Film Library at the AEC.



Michael McLain

Atomics Enter Crime Investigation Field

A new and effective atomic technique used in criminal investigations is covered in a new color motion picture now available from the Atomic Energy Commission.

The new film. "The Nuclear Witness: Activation Analysis in Crime Investigation," is 16mm, runs 28 minutes, and is suitable The Oak Ridge Section of the public, law enforcement officials, the insect repellent were rushed

The new film describes how the analysis is used in the examina-The dinner meeting is set at tion of physical evidence in crimfor the detection of most elements in the usual crime laboratory.

The film may be borrowed free of charge from the Motion Picture



. . . or "morning when the world was made" . . . sees more Y-12ers crossing important bridges with Union Carbide Corporation. Congratulations. 20 YEARS

Vernon O. Messenger, Research Services, May 4.

Hugh Barnette, Janitors Department, May 6. Herman G. P. Snyder, Super

intendents Division, May 6. Clyde T. Oglesby, Grounds and

Maintenance Shops, May 7. Harry G. King Jr., Laboratory

Development, May 8.

Percy D. Duke, Utilities Administration, May 9.

Services, May 7.

Theira J. Flood, Chemical En-

gineering Development, May 7. Clarence R. Bolt, Area Five Maintenance, May 7.

Floyd A. Higginbotham, Gen.

eral Machine Shop, May 7.

Edward Hensley, Area Five Maintenance, May 7.

James E. Thompson Jr., Chemical Services, May 7.

Della M. Lewis, Research Serv ices, May 7.
Steve E. Pelizzari, Assembly

Operations, May 8. William H. Stanton Jr., Stores

Department, May 9. Amburn D. Casey, Electrical

Department, May 9. Keith Eastridge, Research Services, May 10.

Labron Valentine, M-Wing Shop, May 10.

William Stooksbury, Beta Two Forming, May 10.

10 YEARS Peggy L. May, Employment Department, May 7.

Norman E. Hoffman, Beta Four Forming, May 9.

Vietnamese GI's Write For 6-12

Attacked by enemy mosquitos and hampered by a temporary shortage of the proper ammunition to fight the mosquitos, U.S. Marines in Vietnam have been displaying traditional resourcefulness.

Two privates and a corporal, with the Third Marine Division in Danang and Chi Lai, simply sat down and wrote directly to the president of Union Carbide's Consumer Products Division. They stated that the Post Exchange was out of the company's "6-12" brand of insect repellent and that they wanted to buy some.

Wrote one, "I believe your insect repellent is the greatest thing since the fly swatter. When I feel like the insects are winning, I simply pick up my can of repellent, fire a few short bursts to my exposed person, and the insects depart screaming."

being restocked.

A customer at a bar noticed another tippler dipping olives from martinis and dropping them said to the bartender, "He's put-All ISA members and guests than methods currently available ting olives in that jar. Itn't that odd?

Bartender: "Not odd, at all. His wife sent him out for a jar of

Records Crumble

Continued from Page 1 unit having a capacity of 1,200,000 pounds per year and requiring only one-fifth as many people to operate. Since Union Carbide is the world's largest consumer of this chemical, as well as the leading producer, the improved economics resulting from this modernization will be felt not only in ethylene but also in all of the many products derived from it.

The chemical glyoxal, which Union Carbide has produced for over 25 years, was cited as an example of effort to uncover new markets for existing products. Recently, significant quality improvements have been made in the product, and the improved product in turn has made possible the new permanent-press fabrics for which the demand has grown at such a remarkable rate in the past year. As a result of this and other new applications, Union Carbide's glyoxal sales are increasing from about three and one-half million pounds in 1964 to an estimated 30 million pounds this year, and facilities are being installed to bring total capacity to 180 million pounds to meet the rapidly increasing demand for this product.

The battery business is also undergoing substantial growth as a result of the development of new markets and products. The corporation's overall battery sales have increased about 50 per cent in the past five years. increased about 50 per cent in the past five years.

Other Diversified Products Enter Into Many Markets New business opportunities are seen in the recent development of three agricultural chemicals. These will complement the widely used Sevin insecticide, which has made Union Carbide a strong factor in the worldwide pesticide market. One is a miticide and is effective on species that have grown resistant to conventional treatments. Another is a herbicide, which kills weeds as they germinate. The third is a systemic pesticide, which is absorbed internally by growing plants, and, after it has performed its service, is gradually destroyed by the plant through normal processes, so that no toxic threat remains at harvest as a hazard to either man or animal.

Other developments on the list of promising contributors to future earnings growth include peracetic acid and its many derivatives, now being used in a wide variety of markets - including electronic goods, textile fibers, and printing inks, a strong ore position in vandadium, tantalum, and columbium, which is enabling the corporation to participate in the growing market for new materials for space vehicles, aircraft, communications, and other high-performance applications, two new plastic materials, polysulfone and parylene, which are opening up entirely new markets as a result of their unprecedented physical properties, ocean engineering, which has already reached an annual sales rate of about \$2 million, carbon and graphite cloth and yarns for us in electrical and structural components for commercial, military and space applications, and the polarstream intransit refrigeration system, which preserves food quality during delivery more effectively than ever before possible.

Union Carbide serves markets in over 100 countries and has approximately 60 major subsidiary and associated companies with producing plants in about 30 countries. These companies, in which the corporation's ownership ranges from 50 to 100 per cent, employ about 50,000 people.

To show stockholders how rapidly the corporation's foreign business has grown, the results of the last three years were compared — including export sales and the operations of Canadian subsidiaries and other foreign companies 50 per cent or more owned. On this basis, in 1963, sales to customers outside the United States amounted to about \$518 million, in 1964, they increased 24 per cent to \$640 million, and in 1965, they were up 12 per cent to \$715 million. Earnings followed a similar pattern. They were about \$36 million in 1963, increased 61 per cent to \$58 million in 1964, and were up 19 per cent to \$69 million in 1965. Union Carbide's share of these earnings, after deducting for minority and 50 per cent interests, was \$32 million, \$9 million, and \$55 million, respectively.

Currently, an extensive expansion of these foreign operations is underway, which involves not just incremental expansions but, in many instances, the addition of completely new product lines. Among the illustrations given were a wholly owned Belgian subsidiary, which is branching out from a polythylene facility to the production of a broad group of petrochemicals, and an Indian affiliate, which started with a battery plant and now manufacture light cases, carbon products, metals, chemicals and plastics.

Construction of production facilities in other countries has been found to increase rather than decrease Union Carbide's business. The Corporation's foreign business has made a welcome contribution to the improvement of the United States balance of payments. Union Carbide had a favorable balance of \$146 million last year, an increase of \$11 million over the previous year, and expects to continue to maintain a highly favorable balance as its foreign business grows. Subsidiary companies outside the United States are expected to remit substantial dividends to this country and to do their full share in financing their own growth both through internally generated funds and, when necessary, through outside financing based on their own credit standing.